February 24, 1969

Dr. Alvin M. Weinberg
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P. O. Box Y
Oak Ridge, Tennessee

Dear Al:

This has nothing to do with any of our previous correspondence.

I am very puzzled to have been able to find absolutely no literature on the microbiology of an experimental "gamma ray field". One would expect that chronic irradiation of a site continuously exposed to infiltration from the surrounding biosphere would be an ideal method of selecting for radiation-resistant organisms. In any event, the profile fof microbiota along the gradient of radiation exposure would be of very great interest. However, I have been able to find just no literature on observations of this kind. The now famous Micrococcus radiodurans was isolated from food irradiation experiments rather than soil.

In 1957 I visited the swimming pool reactor at Trombai, and was surprised to notice a rather heavy bloom of algal growth in the water. Apparently the illumination from the reactor was driving the photosynthetic cycle of these organisms, and algal contamination was in fact a little bit of technical problem! I did later see a brief note in Nature,which I do not have at my fingertips, describing some of the blue-green algae found in this water, and the fact that they are indeed very resistant to radiation damage.

If you have any resources to help me locate any experimental work on the soil microbiology of gamma ray fields, or can point out the names of the people that I could talk to about it, I would be grateful to you.

One of my graduate students has taken a few samples from the Brookhaven field and has found some moderately resistant organisms in it. However, before he goes a long way in this line of work I would like to have a better grasp of the background. I have also talked about this with McLaren at Berkeley, but did not find that too productive.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

A. WEINBERG